

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-27 and 34-39 are presently active in this case, Claims 1, 3 and 21 amended, and Claims 28-33 canceled and Claims 34-39 added by way of the present amendment.

In the outstanding Office Action, Claims 21-27 were objected to for informalities; Claims 1-4, 8-17 and 21-24 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,290,383 to Koshimizu; and Claims 5-7, 18-20 and 25-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Koshimizu in view of U.S. Patent No. 6,503,364 to Masuda et al.

With regard to the objection to Claims 21-27, these claims have been amended to correct the informalities noted in the outstanding Office Action. Therefore, the objection to these claims is overcome.

Turning now to the merits, in order to expedite issuance of a patent in this case, Applicant has amended independent Claims 1 and 21 to clarify the patentable features of the present invention over the cited references. Specifically, Applicant's Claim 1, as amended recites a viewing port for a process chamber, including a viewing window to permit optical access to the process chamber, and a mounting to couple the viewing window to the process chamber. The mounting includes a first connecting member and a second connecting member, and a viewing window cleaning apparatus is coupled to the mounting and disposed between the viewing window and the process chamber. The cleaning apparatus is configured to form a cleaning plasma in a cleaning plasma region of the mounting. The viewing window is coupled to a first side of the viewing window cleaning apparatus by the first connection member and the process chamber being coupled to an opposite side of the viewing window cleaning apparatus by the second connection member.

Thus, Claim 1 has been amended to clarify that the mounting includes first and second connection members, and further that the viewing window is coupled to the first side of the viewing window cleaning apparatus by the first connection member and the process chamber is coupled to an opposite side of the viewing window cleaning apparatus by the second connection member. Claim 21 has been amended to include similar features with respect to a process chamber having a viewing port coupled to a wall thereof.

An example embodiment covered by amended Claims 1 and 21 is shown in Figures 2 and 3A of Applicant's specification, for example. As seen in these figures, the process chamber 200 includes a mounting 300 coupled thereto. The mounting 300 includes a first connecting member coupling a process chamber side of the mounting 300 to a first side of the window cleaning apparatus 100. A second connection member 302 couples the viewing window 400 to an opposing side of the window cleaning apparatus. As discussed in Applicant's specification, this arrangement advantageously separates the viewing window 400 from the process chamber 200, while providing the viewing window 400 close enough to the plasma generated by the viewing window cleaning system 100 such that by-products on the viewing window can be removed.¹ Further, the connect members enable disassembly of the viewing port.²

In contrast to the claimed invention, the cited reference to Koshimizu discloses a plasma process system with an improved end point detection scheme. As seen in Figure 1, the system includes a conventional process chamber 1 having a viewing window 11 through which light is provided from a spectrometer 5. As shown in Figure 26 of Koshimizu, an observation window 504 is provided as an integral part of a hollow cylindrical portion in which a plasma can be generated. Thus, Koshimizu does not disclose the first and second connection member arranged as recited in amended Claims 1 and 21. In this regard,

¹ Applicant's specification at paragraph [0025].

² Applicant's specification at paragraph [0028].

Koshimizu cannot provide the positioning and/or maintenance capabilities that are provided by way of the viewing port of the claimed invention.

With respect to the secondary reference to Masuda et al., this reference is cited only for the feature contained in the dependent claims of an array of electromagnets. Therefore, Masuda et al. does not correct the deficiencies of Koshimizu noted above.

Thus, Claims 1 and 21 patentably define over the cited references. As the remaining pending claims in this case depend from independent Claim 1 or independent Claim 21, these remaining pending claims also patentably define over the cited references. Nevertheless, Applicant has amended Claim 3 and added Claims 34-39 to further distinguish these claims over the cited reference to Koshimizu.

Specifically, Claim 3 has been amended to clarify that the impedance match assembly and plasma generator are both contained within an outer housing. By contrast, Figure 26 of Koshimizu discloses a schematic representation of an inductive coil 508, and a matching circuit 510 separate from the observation window having the plasma spaced therein. Therefore, Claim 3 provides a further distinction over Koshimizu.

In addition, Claim 4 clarifies that the viewing port includes ISO-KF hardware connecting the connection member to a wall of the process chamber. This allows for retrofitting the inventive viewing port to a process chamber utilizing the standard ISO-KF hardware for connecting the viewing window to the process chamber. Claim 35 recites that the entire outer housing is positioned between the viewing window and process chamber. This provides a compact arrangement of the viewing port. Finally, Claim 36 recites that the viewing port mounting includes a plurality of magnets, a gas injection system, and supporting section, each of which impede reaction byproducts from migrating from the process chamber to the viewing window. Claims 37-39 include features similar to Claims 34-36 with respect to a plasma chamber. Applicant submits that none of the cited references disclose these

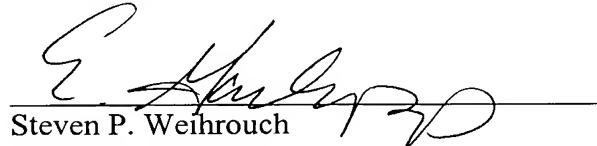
additional features. Therefore, Claims 34-39 provide an additional basis for patentability over the cited references.

For the reasons discussed above, independent Claims 1 and 21, as well as claims depending therefrom, patentably define over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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